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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/564,068  | 06/05/2006  | Alfred Kruse         | HAM. 842081         | 7088             |
| 63967 7590 03/12/2010<br>HUNTSMAN ADVANCED MATERIALS AMERICAS LLC<br>10003 WOODLOCH FOREST DRIVE<br>THE WOODLANDS, TX 77380 |             |                      |                     |                  |
| EXAMINER<br>WALTERS JR, ROBERT S  |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1792  |             |                      |                     |                  |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/564,068

**Applicant(s)**

KRUSE ET AL.

**Examiner**

ROBERT S. WALTERS JR

**Art Unit**

1792

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 8-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 8-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Application***

Claims 1, 2 and 8-19 are pending and presented for examination.

### ***Response to Arguments***

Applicant's arguments filed 12/18/2009 have been fully considered but they are not persuasive. The applicant argues that the amendment to recite "wherein the polyaminoamide is obtained via condensation of a polyalkylene polyamine with a polymerized fatty acid and optionally a mono- and/or dicarboxylic acid" is not taught by the prior art, as the prior art (Leoni, U.S. Pat. No. 4717746) discloses the polyaminoamide obtained by condensation of a heterocyclic amine and a polycarboxylic acid. The applicant contends that Leoni's heterocyclic amine is different from a polyalkylene polyamine. However, Leoni's heterocyclic amine can be piperazine (see abstract, where R is H). Piperazine actually falls into the class of polyalkylene (due to the two ethylene groups) polyamines (due to the two NH groups). Further evidence that piperazine can be classed as a polyalkylene polyamine comes in the form of Ford et al. (U.S. Pat. No. 4362886). Ford states that "Generally, high yields of cyclic polyethylene polyamines, e.g. piperazine, triethylenediamine" (column 1, lines 15-17), which provides further evidence that piperazine should be considered a polyalkylene polyamine. Furthermore, Leoni teaches the polyaminoamide being formed from the condensation of piperazine with a polymerized fatty acid (Example 4, column 3). Therefore, Leoni teaches the newly added limitation.

The applicant further argues that Wozniak neither teaches nor suggests eliminating the primary plasticizer to form an adhesion promoter system containing only a polyaminoamide and secondary plasticizer non-ionic solvent. However, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The applicant further argues that Wozniak neither teaches nor suggests the low amounts of non-ionic solvent. However, it is clear that the amount of the solvent is a result-effective variable, as Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range for the amount of ethyldiglycol through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 2 and 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leoni et al. (U.S. Pat. No. 4717746) in view of Wozniak (U.S. Pat. No. 4851464).

I. Regarding claims 1-2 and 8, Leoni teaches an adhesion promoter for plastisols consisting essentially of a polyaminoamide and a solvent (abstract and column 2, lines 15-17). Leoni further teaches that the solvent can be selected from a broad range of organic products, such as alcohols (column 2, lines 21-24). Finally, Leoni teaches that the polyaminoamide is obtained via condensation of piperazine (a polyalkylene polyamine, see response to arguments section above)

with a polymerized fatty acid (see Example 4, column 3). Leoni fails to teach the adhesion promoter having ethyldiglycol as the solvent in the ranges as claimed.

However, Wozniak teaches an adhesion promoter including ethyldiglycol to solvate the adhesion promoter (abstract and column 3, lines 21-35), where the adhesion promoter is a polyaminoamide adhesion promoter (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's adhesion promoter by utilizing ethyldiglycol as the solvent. One would have been motivated to make this modification as Wozniak teaches that the use of ethyldiglycol as a solvent can render the adhesion promoter more compatible in the plastisol composition (column 3, lines 7-10).

Finally, neither Leoni nor Wozniak teach the adhesion promoter being composed specifically of 10-60%, 25-55%, or 40-50% ethyldiglycol by weight of the total weight of the adhesion promoter. However, Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

II. Regarding claims 9-13, Leoni teaches a plastisol composition comprising an adhesion promoter present in an amount of 1%, fine-particle polyvinyl chloride, and a conventional plasticizer (column 4, lines 52-64). Leoni further teaches the adhesion promoter

for plastisols consisting essentially of a polyaminoamide and a solvent (abstract and column 2, lines 15-17). Leoni further teaches that the solvent can be selected from a broad range of organic products, such as alcohols (column 2, lines 21-24). Finally, Leoni teaches that the polyaminoamide is obtained via condensation of piperazine (a polyalkylene polyamine, see response to arguments section above) with a polymerized fatty acid (see Example 4, column 3). Leoni fails to teach the adhesion promoter having ethyldiglycol as the solvent in the range as claimed.

However, Wozniak teaches an adhesion promoter including ethyldiglycol to solvate the adhesion promoter (abstract and column 3, lines 21-35), where the adhesion promoter is a polyaminoamide adhesion promoter (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's plastisol composition by utilizing ethyldiglycol as the solvent. One would have been motivated to make this modification as Wozniak teaches that the use of ethyldiglycol as a solvent can render the adhesion promoter more compatible in the plastisol composition (column 3, lines 7-10).

Finally, neither Leoni nor Wozniak teach the adhesion promoter being composed specifically of 10-60% ethyldiglycol by weight of the total weight of the adhesion promoter. However, Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

III. Regarding claims 14-16, Leoni teaches a method comprising adding to a plastisol composition an adhesion promoter in 1% by weight of the plastisol composition (column 4, lines 52-64). Leoni further teaches the adhesion promoter for plastisols consisting essentially of a polyaminoamide and a solvent (abstract and column 2, lines 15-17). Leoni further teaches that the solvent can be selected from a broad range of organic products, such as alcohols (column 2, lines 21-24). Finally, Leoni teaches that the polyaminoamide is obtained via condensation of piperazine (a polyalkylene polyamine, see response to arguments section above) with a polymerized fatty acid (see Example 4, column 3). Leoni fails to teach the adhesion promoter comprising ethyldiglycol as the solvent in the ranges as claimed.

However, Wozniak teaches an adhesion promoter including ethyldiglycol to solvate the adhesion promoter (abstract and column 3, lines 21-35), where the adhesion promoter is a polyaminoamide adhesion promoter (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's process by utilizing ethyldiglycol as the solvent. One would have been motivated to make this modification as Wozniak teaches that the use of ethyldiglycol as a solvent can render the adhesion promoter more compatible in the plastisol composition (column 3, lines 7-10).

Finally, neither Leoni nor Wozniak teach the adhesion promoter being composed specifically of 10-60% or 25-55% of ethyldiglycol by weight of the total weight of the adhesion promoter. However, Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the



instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

IV. Regarding claim 17, Leoni teaches a method of coating a substrate comprising adding an adhesion promoter to a plastisol composition comprising fine-particle polyvinyl chloride to form a mixture (column 4, lines 52-64), applying the mixture to a substrate (column 4, line 65-column 5, line 3), and stoving the substrate at a temperature of from 120-160 °C (Table, column 5). Leoni further teaches the adhesion promoter for plastisols consisting essentially of a polyaminoamide and a solvent (abstract and column 2, lines 15-17). Leoni further teaches that the solvent can be selected from a broad range of organic products, such as alcohols (column 2, lines 21-24). Finally, Leoni teaches that the polyaminoamide is obtained via condensation of piperazine (a polyalkylene polyamine, see response to arguments section above) with a polymerized fatty acid (see Example 4, column 3). Leoni fails to teach the adhesion promoter comprising ethyldiglycol as the solvent in the range as claimed, and further fails to explicitly teach homogenizing the mixture.

However, Wozniak teaches an adhesion promoter including ethyldiglycol to solvate the adhesion promoter (abstract and column 3, lines 21-35), where the adhesion promoter is a polyaminoamide adhesion promoter (abstract). Wozniak further teaches a method of coating by using the adhesion promoter described above (see Example 6 specifically) and adding it to a plastisol composition comprising polyvinyl chloride to form a mixture, homogenizing the mixture (see column 7, lines 9-10), applying the mixture to a substrate and heating at 121°C

(column 10, lines 30-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's process by utilizing ethyldiglycol as the solvent and homogenizing the mixture. One would have been motivated to make this modification as Wozniak teaches that the use of ethyldiglycol as a solvent can render the adhesion promoter more compatible in the plastisol composition (column 3, lines 7-10), and homogenizing the mixture would provide a optimally mixed plastisol composition.

Finally, neither Leoni nor Wozniak teach the adhesion promoter being composed specifically of 10-60% of ethyldiglycol by weight of the total weight of the adhesion promoter. However, Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

2. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leoni in view of Wozniak and Burba et al. (U.S. Pat. No. 4440900).

Regarding claims 18 and 19, Leoni teaches a process for producing a plastisol by adding an adhesion promoter in 1% by weight of the plastisol composition, where the plastisol composition comprises fine-particle polyvinyl chloride, to form a mixture (abstract). Leoni further teaches the adhesion promoter for plastisols consisting essentially of a polyaminoamide

and a solvent (abstract and column 2, lines 15-17). Leoni further teaches that the solvent can be selected from a broad range of organic products, such as alcohols (column 2, lines 21-24). Finally, Leoni teaches that the polyaminoamide is obtained via condensation of piperazine (a polyalkylene polyamine, see response to arguments section above) with a polymerized fatty acid (see Example 4, column 3). Leoni fails to teach the adhesion promoter comprising ethyldiglycol as the solvent in the range as claimed, and further fails to explicitly teach homogenizing the mixture. Leoni further fails to teach the plastisol being a self-adhesive plastisol.

However, Wozniak teaches an adhesion promoter including ethyldiglycol to solvate the adhesion promoter (abstract and column 3, lines 21-35), where the adhesion promoter is a polyaminoamide adhesion promoter (abstract). Wozniak further teaches a method of coating by using the adhesion promoter described above (see Example 6 specifically) and adding it to a plastisol composition comprising polyvinyl chloride to form a mixture, homogenizing the mixture (see column 7, lines 9-10), applying the mixture to a substrate and heating at 121°C (column 10, lines 30-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's process by utilizing ethyldiglycol as the solvent and homogenizing the mixture. One would have been motivated to make this modification as Wozniak teaches that the use of ethyldiglycol as a solvent can render the adhesion promoter more compatible in the plastisol composition (column 3, lines 7-10), and homogenizing the mixture would provide a optimally mixed plastisol composition.

Burba teaches the use of an adhesion promoter comprised of a polyaminoamide from 0.5 to 5% by weight in a similar plastisol composition (column 2, lines 16-52). Burba further teaches that this adhesion promoter can be readily added to commonly used plastisol

formulations to provide a self-adhesive plastisol (column 7, lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Leoni's process to add the adhesion promoter to a common self-adhesive formulation in 0.3-5% by weight to provide a self-adhesive plastisol. One would have been motivated to make this modification as this would allow the plastisol to be coated and bond well to unprimed surfaces and would no longer necessarily require a primed surface to enable effective bonding.

Finally, none of the references of record teach the adhesion promoter being composed specifically of 10-60% of ethyldiglycol by weight of the total weight of the adhesion promoter. However, Leoni teaches that the concentration of the adhesion promoter solution will need to be adjusted according to the viscosity of the resin and its solubility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

Claims 1, 2 and 8-19 are pending.

Claims 1, 2 and 8-19 are rejected.

No claim is allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/  
Supervisory Patent Examiner, Art Unit  
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/ROBERT S. WALTERS JR/  
March 10, 2010  
Examiner, Art Unit 1792